



improving your
drinking
Water
disinfection method

improving our

In a cooperative effort, the City of Durham, Chatham County, the Town of Hillsborough and the Orange Water and Sewer Authority (Chapel Hill/Carrboro) will all change their disinfection process for drinking water from “chlorination” to “chloramination.” Many cities throughout the region and the United States use chloramines instead of chlorine to disinfect drinking water. Chloraminated drinking water is perfectly safe for drinking, bathing, cooking and other daily water uses. **However, there are two groups of people who need to take special care with chloraminated water: kidney dialysis patients and fish owners. Following are questions and answers that address the most common questions that customers may have.**



What is the current drinking water disinfection method?

The current method of disinfection used by all four water suppliers is chlorination. In this process, chlorine is added to drinking water at a controlled level. Chlorination is an effective way to kill many kinds of bacteria and other germs that may be harmful to one's health. Our communities are proud to state that our drinking water systems have met State and Federal standards for bacterial control and other regulated substances for many years.

What is chloramination?

Chloramination is the use of both ammonia and chlorine to disinfect water. Ammonia is added to water at a carefully controlled level. The chlorine and ammonia react chemically to produce

drinking water

combined chlorine or chloramines. Chloramination is as effective as chlorine in killing many kinds of bacteria and other germs that may be harmful to personal health. Chloraminated water is perfectly safe to drink.

In the U.S., many water systems have used chloramination for several decades. In the Triangle area, the City of Raleigh and Town of Cary already use chloramination as a disinfection method.

Why the change to chloramines?

The City of Durham, Chatham County, the Town of Hillsborough and Orange Water and Sewer Authority are making the change to chloramination to reduce the level of certain byproducts of chlorination. These disinfection byproducts, called trihalomethanes (THMs) and haloacetic acids (HAAs), result from reactions of chlorine with the small amounts of naturally occurring organic substances in filtered drinking water. Both THMs and HAAs are suspected carcinogens (cancer-causing substances) when present at elevated levels and consumed over long periods of time. By using chloramination as a disinfection method, area suppliers will all be able to:

- reduce the levels of THMs and HAAs in drinking water
- remain in compliance with the Federal Safe Drinking Water Act
- continue to supply water customers with safe and aesthetically pleasing water.

How will chloramination affect our water customers?

For most customers, the only noticeable change will be an improvement in the taste and odor of the drinking water.

With chloramination, the chlorine smell and taste in our water will be less apparent. Two groups of water customers—kidney dialysis patients and fish owners—must take special precautions.



People with weakened immune systems, including infants, elderly people and persons with HIV/AIDs or who are undergoing chemotherapy, etc. should consult a health professional about whether to use specially treated water instead of water from normal public sources using either chlorinated or chloraminated drinking water.

Why will kidney dialysis patients and fish owners be affected by chloramines?

Customers who use drinking water for dialysis treatment, in fish tanks, in aquaculture and for certain other special uses will need to make some changes. Chloramines are harmful when they go directly into the bloodstream. In the dialysis process, water comes into contact with blood across a permeable membrane. Chloramines in dialysis water would be toxic, just as chlorine in dialysis would be toxic, and therefore must be removed from water used in kidney dialysis machines. Fish also take chloramines directly into their bloodstreams, so chloramines must be removed from aquariums and fish bowls.

What precautions should kidney dialysis patients take?

Both chlorine and chloramines must be removed from the water used in kidney dialysis machines. Medical centers that perform dialysis and dialysis centers are responsible for purifying water

that enters the dialysis machines. Each of the suppliers has already notified physicians, clinics and medical facilities in the community about the need to remove chloramines from water used in dialysis machines. Customers with home dialysis equipment should contact their physicians regarding chloramination and how it will affect them. They should also check with the equipment manufacturer for information.

What precautions should fish owners take?

Chloramines should be removed from water that is used in fish tanks, ponds, and aquariums. Tropical fish shops and other businesses that keep fish or other animals in aquariums or ponds are encouraged to contact a pet supply company about how to treat their water to remove chloramines before using drinking water in an aquarium.

Similarly, customers who use drinking water for aquaculture (growing plants in a water tank or pond) are encouraged to get expert advice regarding whether and how to neutralize or remove chloramines. Also, restaurants and grocery stores with lobster tanks must take special precautions to treat the water.

Will chloramination affect routine business water uses?

Businesses and other establishments that use municipal drinking water for commercial laundering operations, laboratory procedures and other processes in which water characteristics must be carefully controlled should get advice from equipment manufacturers or other suppliers regarding work changes that may be needed.

Will chloramination affect routine household water uses?

Chloramination will not affect routine water uses such as food preparation, household laundering and dishwashing, watering plants, etc. Chloramines will not have any effect on plants of any type, and will usually be removed by the high chlorine demand in the soil.

Will changing to chloramines increase my water bill?

The cost of using chloramines for disinfection is about the same as the costs for chlorine. No rate increases are expected as a result of the disinfection process change.

Do home water softeners remove chloramines?

Most water softeners are not designed to remove chloramines.

Will using chloramines affect swimming pools?

No. Swimming pool managers and owners will still need a free-chlorine residual to retard algae and bacterial growths. Contact local pool supply stores for specifics.

Does bottled water have chloramines?

Possibly—depending on the source of the water. If the bottled water company uses water supplied by a municipal water source that uses chloramines, the bottled water will have chloramines unless the company takes special steps to remove it.

How can I get more information?

Information and updates will be posted on each water supplier’s website. Feel free to contact your water system at the number listed whenever you have a question or comment.

local water systems

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| City of Durham (Jan. 2002) Environmental Resources Department 101 City Hall Plaza Durham, NC 27701 (919) 560-4381 www.ci.durham.nc.us | Orange Water and Sewer Authority (OWASA) (Jan. 2002) Post Office Box 366 400 Jones Ferry Road Carrboro, NC 27510 (919) 968-4421 www.owasa.org |
| Chatham County (Jan. 2002) Public Works Department Post Office Box 1550 Pittsboro, NC 27312 (919) 542-8270 www.co.chatham.nc.us | Town of Hillsborough (July 2002) Town Engineer/Utilities Director Post Office Box 429 Hillsborough, NC 27278 (919) 732-1270 www.ci.hillsborough.nc.us |

Note: Parentheses indicate proposed start-up date for disinfection process